Day 3 Session 2 Breakout 1 Notes by Dan (co-lead Yuanfu)

1. What additional capability or improvement is needed or LAPS in your future applications?
    a. Domain Wizard
    b. User friendly way to interface data sources
        i. Nest7grid.parm
        ii. Topograbber > “data grabber”
        iii. Localization
        iv. WRF inter”face”
        v. QC between the two
    c. Cloud Hydrometeor phase
    d. More use of Clear-Air Doppler

2. Would you consider testing STMAS for your future applications?
    a. YES (overwhelming)
    b. Then “how to do this better?”
        i. Run LAPS and STMAS together first before getting info back to FAB (make sure it is “better”)
        ii. If nor a parallel LAPS run it could be:
            1. GSI
            2. whatever (HIRLAM)
        iii. FAB could help run parallel systems for developers who do not have the resources to run a parallel system.
    c. Documentation

3. What applications in the near future would require improving hotstart scheme?
    a. Sigma coordinate system possibly LAPS-WRF commonality, perhaps sigma low-level, eta higher-level
    b. Radar data influence hotstart
    c. Lidar (nrel)
    d. Topo issues:
        i. High Resolution topo orographic forcing
        ii. Current topo testing
        iii. Spline topo testing
    e. Downscaling

4. What are the requirements for your applications usinge the analysis system? Efficiency, portability and better analysis comparing to other DA techniques?
    a. Economical (cheap or free)
    b. Investigate a free source
    c. Popular compiler focus (gfortran) might enhance the likelihood of a low-budget user to implement our system (more proliferation of LAPS/STMAS)
    d. Latency
    e. Format (probably will be evolving, but should be standardized)

f. Radar “error” confidence QC
g. Dual Pol data
h. Precip gauge data influence radar normalization (precip rate)
i. Consider acquiring Ken Howard’s radar QC in our system.